8-(4-(2-isoxazol-5-ylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2-methoxy-4-propylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2-chloro-3-(trifluoromethyl)phenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(1-methyl-4-(2-methylphenoxy)butoxy)quinolin-2-amine;
8-(1-methyl-4-(3-methylphenoxy)butoxy)quinolin-2-amine;
8-(1-methyl-4-(4-methylphenoxy)butoxy)quinolin-2-amine;
8-(4-(2-chloro-5-methylphenoxy)-1-methylbutoxy)quinolin-2-amine;
4-((4-((2-aminoquinolin-8-yl)oxy)pentyl)oxy)phenol;
8-(4-(3-methoxyphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(4-methoxyphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2-fluorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(3-fluorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(4-fluorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2-chlorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(3-chlorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(4-chlorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2-bromophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(3-bromophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(4-bromophenoxy)-1-methylbutoxy)quinolin-2-amine;
3-((4-((2-aminoquinolin-8-yl)oxy)pentyl)oxy)benzonitrile;
4-((4-((2-aminoquinolin-8-yl)oxy)pentyl)oxy)benzonitrile;
8-(1-methyl-4-(3-(trifluoromethyl)phenoxy)butoxy)quinolin-2-amine;
8-(1-methyl-4-(4-(trifluoromethyl)phenoxy)butoxy)quinolin-2-amine;
8-(1-methyl-4-(3-(trifluoromethoxy)phenoxy)butoxy)quinolin-2-amine;
8-(4-(2,3-dimethylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2,4-dimethylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2,5-dimethylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(3,4-dimethylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(3,5-dimethylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2,3-dichlorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2,4-dichlorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2,5-dichlorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(3-isopropyl-5-methylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(3,4-dichlorophenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2-chloro-4-methylphenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(2-(benzyloxy)phenoxy)-1-methylbutoxy)quinolin-2-amine;
8-(cyclobutylmethoxy)quinolin-2-amine;
8-(2-cyclopropylethoxy)quinolin-2-amine;
8-(cyclopentylmethoxy)quinolin-2-amine;
8-(cyclohexylmethoxy)quinolin-2-amine;
8-(2-cyclohexylethoxy)quinolin-2-amine;
8-((1S,4R)-bicyclo[2.2.1]hept-2-ylmethoxy)quinolin-2-amine;
8-(1-cyclohexylpropoxy)quinolin-2-amine;
8-(((1R,2R)-2-methylcyclohexyl)oxy)quinolin-2-amine;
8-(1-cyclohexylethoxy)quinolin-2-amine;

8-(tetrahydrofuran-3-ylmethoxy)quinolin-2-amine;
8-(2-(1-methylpyrrolidin-2-yl)ethoxy)quinolin-2-amine;
8-(3-((2-methylquinolin-8-yl)oxy)propoxy)quinolin-2-amine;
8-(3-(quinolin-8-yloxy)propoxy)quinolin-2-amine;
8-(3-((2-aminoquinolin-8-yl)oxy)propoxy)quinolin-2-ol;
6-(3-((2-aminoquinolin-8-yl)oxy)propoxy)quinolin-2-ol;
4-(3-((2-aminoquinolin-8-yl)oxy)propoxy)quinolin-2-amine;
8-(1-methyl-4-((2-methylquinolin-8-yl)oxy)butoxy)quinolin-2-amine;
8-(4-((2-aminoquinolin-8-yl)oxy)-1-methylbutoxy)quinolin-2-amine;
8-(1-methyl-4-(quinolin-7-yloxy)butoxy)quinolin-2-amine;
8-(4-(isoquinolin-5-yloxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-(dibenzo[b,d]furan-2-yloxy)-1-methylbutoxy)quinolin-2-amine;
8-(4-((2,2-dimethyl-2,3-dihydro-1-benzofuran-7-yl)oxy)-1-methylbutoxy)quinolin-2-amine;
6-((4-((2-aminoquinolin-8-yl)oxy)pentyl)oxy)-1,3-benzoxathiol-2-one;
8-(4-(1,3-benzodioxol-5-yloxy)-1-methylbutoxy)quinolin-2-amine;
N-((5-(2-(trifluoromethyl)phenyl)-2-furyl)methyl)-8-(1,3,3-trimethylbutoxy)quinolin-2-amine;
N-((5-(2-nitrophenyl)-2-furyl)methyl)-8-(1,3,3-trimethylbutoxy)quinolin-2-amine;
N-((5-(2-chlorophenyl)-2-furyl)methyl)-8-(1,3,3-trimethylbutoxy)quinolin-2-amine;
8-((5-((2-aminoquinolin-8-yl)oxy)pentyl)oxy)-quinolin-2-amine;
8-(3-((2-aminoquinolin-8-yl)oxy)butoxy)quinolin-2-amine;
8-(3-((2-aminoquinolin-8-yl)oxy)propoxy)-*N*-methylquinolin-2-amine; and
8-(2-(2-((2-aminoquinolin-8-yl)oxy)ethoxy)ethoxy)-quinolin-2-amine.

12 (Original). The following additional compounds
8-isopropoxyquinolin-2-amine;
8-sec-butoxyquinolin-2-amine;
8-(1-methylbutoxy)quinolin-2-amine;
8-(1,2-dimethylpropoxy)quinolin-2-amine;
8-(1-ethylpropoxy)quinolin-2-amine;
8-ethoxyquinolin-2-amine;
8-propoxyquinolin-2-amine;
8-butoxyquinolin-2-amine;
8-isobutoxyquinolin-2-amine;
8-(pentyloxy)quinolin-2-amine;
8-(2-methylbutoxy)quinolin-2-amine;
8-(3-methylbutoxy)quinolin-2-amine;
8-(((1R)-1-methylpropyl)oxy)quinolin-2-amine;
8-(((1S)-1,2-dimethylpropyl)oxy)quinolin-2-amine;
8-(((1R)-1,2-dimethylpropyl)oxy)quinolin-2-amine;
8-(((1S)-1-methylpropyl)oxy)quinolin-2-amine; 8-((1-isopropylbut-3-enyl)oxy)quinolin-2-amine;
8-((1,5-dimethylhex-4-enyl)oxy)quinolin-2-amine;
8-((2E)-but-2-enyloxy)quinolin-2-amine; 8-hexylquinolin-2-amine;

8-(1-methylpentyl)quinolin-2-amine;
8-(1-ethylbutyl)quinolin-2-amine;
8-(1-ethylpentyl)quinolin-2-amine; 3-((2-aminoquinolin-8-yl)oxy)propan-1-ol; and
4-((2-aminoquinolin-8-yl)oxy)pentan-1-ol.

13 (Currently Amended). A method of treating ~~disorders~~ **obesity,** ~~mediated by MCH through the~~ **by antagonizing the** MCH receptor comprising administering a therapeutically effective amount of a compound of formula (I).

14 (Canceled). A method for treating eating disorders, weight gain and obesity comprising administering a therapeutically effective amount of a compound of formula (I).

15 (Canceled). A method for treating abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping, arousal, anxiety, depression, seizures, neurodegeneration and psychiatric disorders comprising administering a therapeutically effective amount of a compound of formula (I).

16 (Original). A pharmaceutical composition comprising a therapeutically effective amount of a compound of formula (I) in combination with a pharmaceutically suitable carrier.

Remarks

1. Claims 1 and 16 stand rejected under 35 USC § 102(b) as being anticipated by Cricchio and Savini. Applicants respectfully traverse this rejection and request withdrawl of the same. Applicants have amended claim 1 and the amendment renders the rejection of both claim 1 and 16 moot.

2. Claim 1-13 and 16 stand rejected under 35 USC 103(a) as being unpatentable over Savini, Criccho, and Nilsson. Specifically, the Examiner maintains that Savini teaches a compound that is encompassed by the instantly claimed Markush. Cricchio teaches the use of the Savini compound as a bactericide. And Nilsson teaches a Markush that encompasses the instant compounds and suggests that they might be useful to treat eating disorders. Applicants respectfully traverse this rejection and request withdrawal of the same.

Applicants have amended claims 1, 2, 4, 6, 8, and 10 and this amendment removes the compound taught by Savini and Criccho from the currently claimed Markush.
Nilsson does not teach a single compound that anticipates the claimed genus, instead the Examiner argues Nilsson provides the necessary motivation to use the claimed compounds to treat obesity. But, the compounds in Nilsson are agonists of the 5-HT_{2c} receptor which is related to serotonin uptake. The instantly claimed compounds antagonize the effects of melanin-concentrating hormone (MCH) through the melanin concentrating hormone receptor. MCH has been identified as an orexigenic peptide that counterbalances the activity of leptin. There is simply no teaching or suggestion in Nilsson that the compounds claimed in the instant invention could antagonize MCH.

For a reference or combination of references to render a claimed invention unpatentable under 35 USC 103(a), the cited reference must teach, disclose, or suggest the claimed modification. Savini, Criccho, and Nilsson together fail to teach the instantly claimed compounds and fail to suggest their use as MCH antagonists. For all the above reasons Applicants respectfully request withdrawal of the 35 USC 103(a) obviousness rejection.

3. Claims 13-15 stand rejected under 35 USC 112, first paragraph, for failing to comply with the written description requirement. The Examiner maintains that the specification does not adequately describe the nexus between the modulation of the MCH receptor and a useful treatment or disease. Applicants respectfully traverse this rejection and request withdrawal of the same.

Applicants have clearly and adequately described that the compounds of the instant invention antagonize the MCH receptor. Melanin-concentrating hormone (MCH) has been identified as an orexigenic peptide that counterbalances the activity of leptin. MCH is a cyclic

19 amino acid neuropeptide expressed in the zona incerta and lateral hypothalamus in response to both energy restriction and leptin deficiency. MCH is well known to stimulate feeding therefore inhibition of MCH is known to be useful for the treatment of obesity. Applicants provided in vitro data on page 20 of the specification.

Applicants have canceled claims 14 and 15. Applicants have amended claim 13 to more clearly define the invention.

4. Claims 13-15 stand rejected under 35 USC 112, first paragraph, for failing to comply with the enablement requirement. The Examiner applied the In re Wands factors to the Applicants' invention and concluded that one skilled in the art could not practice the invention without undue experimentation. Applicants traverse this rejection and respectfully request withdrawal of the same.

Applicants have canceled claims 14 and 15 and amended claim 13 to more distinctly claim the invention.

Applicants conducted and teach an assay for release of intracellular calcium. (see page 19-20 of the instant specification). Activation of the melanin concentrating hormone receptor (MCHR) by MCH induces the release of Ca^{++} from intracellular stores. Therefore, antagonist activity was determined by the test compounds ability to inhibit MCH induced Ca^{++} flux and calculated as % inhibition. Since it is well known in the art that mice lacking MCH are hypophagic and lean with increased metabolic rate, whereas animals over-expressing MCH gain excess weight, Applicants maintain a person of ordinary skill in the art would be well equipped to practice the invention without undue experimentation.

The Examiner maintains that there is a lack of working examples in the instant application. Applicants respectfully point to page 20 of the specification and the results of the assay, which are provided as ranges. The court in *Cross v. Iizuka* clearly held that *in vitro* data is sufficient to comply with §§ 101 and 112, first paragraph, if the data shows that the compounds will be credible candidates for further screening. In *Cross*, Iizuka provided an IC50 value for a single compound and that showing, in and of itself, demonstrated a useful activity and provided sufficient guidance to enable one of skill in the art, without undue experimentation, to use the claimed compounds of the genus. Therefore, Applicants maintain that the Biological Data section provides the necessary guidance to support a finding that the invention is enabled.

ACTION REQUESTED

For all the forgoing reasons, Applicants submit that pending claims 1-13, and 16 are in condition for allowance. Entry of the proposed amendment and allowance of the application is

respectfully requested. To that end, the Examiner is invited to contact the undersigned to schedule an Examiner Interview to discuss any matter.

Respectfully submitted,
Collins, et al.

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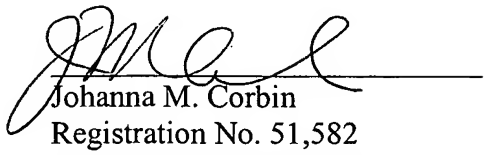

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Of:

MITSUYUKI UCHIKOSHI

Application No.: 10/611,713

Filed: 07/01/2003

Group Art Unit:

BODY TENSION APPARATUS FOR SHIRTS PRESS MACHINE

REQUEST FOR STATUS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant wishes to request the status of the above patent application. This issue fee was paid on August 6, 2004. A Petition for Revival of Application Abandoned Unintentionally under 35 C.F.R. 1.17(m) was granted on August 30, 2004. To date, no patent number has been assigned to this application.

Respectfully submitted,

ANDRUS, SCEALES, STARKE & SAWALL, LLP

Joseph J. Jochman
Reg. No. 25,058

Andrus, Sceales, Starke & Sawall, LLP
100 East Wisconsin Avenue
Milwaukee, WI 53202
(414) 271-7590
Attorney Docket No: 1779-00016

PATENTS

IN THE UNITED STATES PATENT AND TRADMARK OFFICE

Applicants: Collins et al.

Serial No.: 10/460,139

Filed: June 12, 2003

Title: 2-AMINOQUINOLINES AS MELANIN CONCENTRATING HORMONE RECEPTOR ANTAGONISTS

Group Art No.: 1625

Examiner: Seaman, D Margaret M.

Case No.: 6944US02

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the:

Mail Stop Petitions
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450 on:

Date of Deposit: January 13, 2005

Tanya Parent 1/13/05

Tanya Parent Date

Mail Stop Petitions
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER

Dear Sir:

Enclosed herewith for the patent application identified above entitled 2-AMINOQUINOLINES AS MELANIN CONCENTRATING HORMONE RECEPTOR ANTAGONISTS are the following:

1. Petition for Revival of an Application for Patent Abandoned Unintentionally;
2. Amendment and Response, (13 pages); and
3. Return Receipt Postcard

The Commissioner is hereby authorized to charge any additional Filing Fees required under 37 CFR §1.16, as well as any patent application processing fees under 37 CFR §1.17 associated with this communication for which full payment had not been tendered, to Deposit Account No. 01-0025.

Respectfully submitted,
Collins et al.

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